

CLAIMS

1. Nucleotide sequence encoding a polypeptide capable of interacting with topoisomerase III α .

5 2. Nucleotide sequence according to Claim 1, characterized in that it encodes a polypeptide comprising all or part of the polypeptide sequence SEQ ID No. 4 or of its derivatives.

3. Nucleotide sequence according to either
10 of Claims 1 and 2, characterized in that it comprises all or part of the nucleotide sequence SEQ ID No. 3 or of its derivatives.

4. Polypeptide, characterized in that it is capable of interacting with topoisomerase III α .

15 5. Polypeptide according to Claim 4, characterized in that it comprises all or part of the polypeptide sequence SEQ ID No. 4 or of a sequence derived therefrom.

6. Polypeptide according to Claim 4,
20 characterized in that it consists of the polypeptide sequence corresponding to residues 318-662 of the sequence SEQ ID No. 5 or of a sequence derived therefrom.

7. Use of a polypeptide or of a polypeptide
25 fragment according to Claims 4 to 6, for slowing down, inhibiting, stimulating or modulating the activity of topoisomerase III α .

8. Antibody or antibody fragment directed against a polypeptide according to one of Claims 4 to 6.

9. Method for detecting or identifying
5 compounds capable of binding to a polypeptide as defined according to one of Claims 4 to 6, characterized in that the following steps are carried out:

a - a molecule or a mixture containing
10 various molecules, optionally unidentified, is brought into contact with a polypeptide as defined according to one of Claims 4 to 6 under conditions allowing the interaction between said polypeptide and said molecule in the case where the latter might possess affinity for
15 said polypeptide, and,

b - the molecules bound to said polypeptide are detected and/or isolated.

10. Method for detecting or identifying compounds capable of modulating or inhibiting the
20 interaction between topoisomerase III- α and a polypeptide as defined according to Claims 4 to 6, characterized in that the following steps are carried out:

a - the binding of topoisomerase III α or of a
25 fragment thereof to said polypeptide is carried out;

b - a compound to be tested for its capacity to inhibit the binding between topoisomerase III α and said polypeptide is added;

c - the displacement or inhibition of the
5 binding of topoisomerase III α to said polypeptide is determined;

d - the compounds which prevent or which impede the binding between topoisomerase III α and said polypeptide are detected and/or isolated.

10 11. Ligand for a polypeptide as defined according to Claims 4 to 6, capable of being obtained according to the method of Claim 9.

12. Ligand capable of modulating or inhibiting the interaction between topoisomerase III α
15 and a polypeptide as defined according to Claims 4 to 6, capable of being obtained according to the method of Claim 10.

13. Use of a ligand according to Claim 11 or 12 for the preparation of a medicament intended for the
20 prevention, improvement or treatment of diseases involving a cell cycle dysfunction.

14. Pharmaceutical composition comprising, as active ingredient, at least ligand according to either of Claims 11 and 12 or an antibody according to
25 Claim 8.

15. Composition according to Claim 14, intended for modulating slowing down or inhibiting the activity of topoisomerase III α .

16. Composition according to either of
5 Claims 14 and 15, intended for the prevention, improvement or treatment of diseases involving a cell cycle dysfunction.